

CLAIMS

1. A visual inspection apparatus, comprising:

at least one beam splitter that receives a line-shaped collimated beam, splits the line-shaped collimated beam into a first line-shaped collimated beam and a second line-shaped collimated beam, and vertically emits the first line-shaped collimated beam to a line-shaped area on a front surface of an inspection object;

a first image sensor that receives a first reflected beam of the first line-shaped collimated beam reflected in the line-shaped area;

at least one mirror that obliquely emits the second line-shaped collimated beam to the line-shaped area on the front surface of the inspection object; and

a second image sensor that receives a second reflected beam of the second line-shaped collimated beam reflected in the line-shaped area.

2. The visual inspection apparatus as set forth in claim 1,

wherein the line-shaped collimated beam received by the beam splitter is generated by a first lens that receives a beam emitted from a light source.

3. The visual inspection apparatus as set forth in claim 1, further comprising:

a second lens that receives the first reflected beam before the first image sensor receives

the first reflected beam,

wherein the first image sensor has a third lens, and

wherein the second lens and the third lens compose a telecentric lens.

4. The visual inspection apparatus as set forth in claim 1, further comprising:

a fourth lens that receives the second reflected beam before the second image sensor receives the second reflected beam,

wherein the second image sensor has a fifth lens, and

wherein the fourth lens and the fifth lens compose a telecentric lens.

5. The visual inspection apparatus as set forth in claim 4, further comprising:

an aperture that blocks a part of the second reflected beam before the second image sensor receives the second reflected beam.

6. The visual inspection apparatus as set forth in claim 1,

wherein the number of the at least one beam splitter is one,

wherein a beam reflected by the beam splitter is the first line-shaped collimated beam, and

wherein a beam that is transmitted by the beam splitter is the second line-shaped collimated beam.

7. The visual inspection apparatus as set forth in claim 1,

wherein the at least one beam splitter is a first beam splitter and a second beam splitter,

5 wherein a beam reflected by the first beam splitter is received by the second beam splitter and a beam that is transmitted by the first beam splitter is the second line-shaped collimated beam, and

10 wherein a beam reflected by the second beam splitter is the first line-shaped collimated beam.

8. The visual inspection apparatus as set forth in claim 1,

wherein the inspection object is an optical disc,

15 wherein the first line-shaped collimated beam and the second line-shaped collimated beam are emitted to one part of the line-shaped area in a radius direction of the disc, and

20 wherein each of the first image sensor and the second image sensor is composed of a line sensor.

9. The visual inspection apparatus as set forth in claim 8, further comprising:

disc drive means for rotating the optical disc,

25 wherein the disc drive means rotates the optical disc so that the first line-shaped collimated beam and the second line-shaped collimated beam are

emitted to an adjacent part of the line-shaped area of the optical disc after the first image sensor photographs the received first reflected beam and the second image sensor photographs the received second reflected beam.

10. The visual inspection apparatus as set forth in claim 1,

wherein the inspection object is a tape-shaped record medium,

wherein the first line-shaped collimated beam and the second line-shaped collimated beam are emitted to one part of the line-shaped area perpendicular to a longitudinal direction of the record medium, and

wherein each of the first image sensor and the second image sensor is composed of a line sensor.

11. The visual inspection apparatus as set forth in claim 10, further comprising:

feeding means for feeding the record medium,

wherein the feeding means moves the record medium so that the first line-shaped collimated beam and the second line-shaped collimated beam are emitted to an adjacent part of the line-shaped area of the record medium after the first image sensor photographs the received first reflected beam and the second image sensor photographs the received second reflected beam.